

- 16 **Foreman RD**, Linderth B, Ardell JL, *et al*. Modulation of intrinsic cardiac neurons by spinal cord stimulation: implications for its therapeutic use in angina pectoris. *Cardiovasc Res* 2000;**47**:367–75.
- 17 **Issa ZF**, Zhou X, Ujhelyi MR, *et al*. Thoracic spinal cord stimulation reduces the risk of ischemic ventricular arrhythmias in a postinfarction heart failure canine model. *Circulation* 2005;**111**:3217–20.
- 18 **Tanaka S**, Barron KW, Chandler MJ, *et al*. Low intensity spinal cord stimulation may induce cutaneous vasodilation via CGRP release. *Brain Res* 2001;**896**:183–7.
- 19 **Gherardini G**, Lundberg T, Cui JG, *et al*. Spinal cord stimulation improves survival in ischemic skin flaps: an experimental study of the possible mediation by calcitonin gene-related peptide. *Plast Reconstr Surg* 1999;**103**:1221–8.
- 20 **Gersbach PA**, Hasdemir MG, Eeckhout E, *et al*. Spinal cord stimulation treatment for angina pectoris: more than a placebo? *Ann Thorac Surg* 2001;**72**:S1100–4.
- 21 **Linderth B**. Spinal cord stimulation in ischemia and ischemic pain. In: Horsch S, Claeys L, eds. *Spinal cord stimulation: an innovative method in the treatment of PVD and angina*. Darmstadt: Steinkopff, 1995:19–35.
- 22 **Di Pede F**, Zuin G, Giada F, *et al*. Long-term effects of spinal cord stimulation on myocardial ischemia and heart rate variability: results of a 48-hour ambulatory electrocardiographic monitoring. *Ital Heart J* 2001;**2**:690–5.
- 23 **American Thoracic Society**. ATS statement: guidelines for the six-minute walk test. *Am J Respir Crit Care Med* 2002;**166**:1111–17.
- 24 **Boissel JP**, Philippon AM, Gauthier E, *et al*. Time course of long-term placebo therapy effects in angina pectoris. *Eur Heart J* 1986;**7**:1030–6.
- 25 **Brown WA**. The placebo effect. *Sci Am* 1998;**278**:90–5.
- 26 **Diedrichs H**, Zobel C, Theissen P, *et al*. Symptomatic relief precedes improvement of myocardial blood flow in patients under spinal cord stimulation. *Curr Control Trials Cardiovasc Med* 2005;**6**:7.
- 27 **Kienle GS**, Kiene H. The powerful placebo effect: fact or fiction? *J Clin Epidemiol* 1997;**50**:1311–18.
- 28 **Greenwood-Van Meerveld B**, Johnson AC, Foreman RD, *et al*. Attenuation by spinal cord stimulation of a nociceptive reflex generated by colorectal distention in a rat model. *Auton Neurosci* 2003;**104**:17–24.
- 29 **Fung JW**, Yu CM, Yip G, *et al*. Effect of beta blockade (carvedilol or metoprolol) on activation of the renin-angiotensin-aldosterone system and natriuretic peptides in chronic heart failure. *Am J Cardiol* 2003;**92**:406–10.
- 30 **Mancini DM**, Katz SD, Lang CC, *et al*. Effect of erythropoietin on exercise capacity in patients with moderate to severe chronic heart failure. *Circulation* 2003;**107**:294–9.
- 31 **Garrigue S**, Bordachar P, Reuter S, *et al*. Comparison of permanent left ventricular and biventricular pacing in patients with heart failure and chronic atrial fibrillation: prospective haemodynamic study. *Heart* 2002;**87**:529–34.
- 32 **Cazeau S**, Leclercq C, Lavergne T, *et al*. Effects of multisite biventricular pacing in patients with heart failure and intraventricular conduction delay. *N Engl J Med* 2001;**344**:873–80.
- 33 **Ingle L**, Shelton RJ, Rigby AS, *et al*. The reproducibility and sensitivity of the 6-min walk test in elderly patients with chronic heart failure. *Eur Heart J* 2005;**26**:1742–51.
- 34 **Diedrichs H**, Zobel C, Theissen P, *et al*. Symptomatic relief precedes improvement of myocardial blood flow in patients under spinal cord stimulation. *Curr Control Trials Cardiovasc Med* 2005;**6**:7.

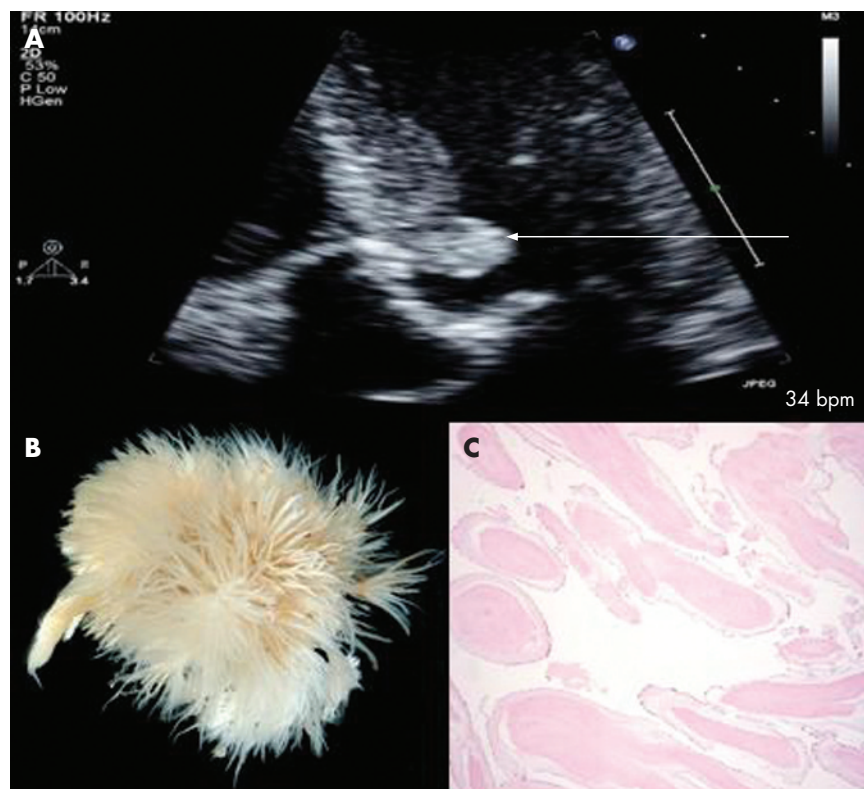
## IMAGES IN CARDIOLOGY .....

### Papillary fibroelastoma in the left ventricular outflow tract

A 78-year-old man presented with a short history of severe dyspnoea and bradycardia (2:1 heart block, 30 bpm). Examination showed an ejection systolic murmur, and echocardiography showed a heavily calcified aortic valve with a peak gradient of 90 mm Hg. A large mobile mass (1.2×1.5 cm) was also observed in the region of the left ventricular outflow tract (panel A). Angiography was then undertaken, which showed coronary artery disease in the left anterior descending artery and the first obtuse marginal artery. At aortotomy, a heavily calcified stenotic bicuspid aortic valve was excised to disclose a large mobile 1.0×1.5 cm pedunculated mass at the junction of the membranous and muscular septum. A bioprosthetic aortic valve (23 mm Perimount, CE Lifesciences, Woodridge, Illinois, USA) and coronary artery bypass grafts were performed. Histological examination of the mass showed it to be a papillary fibroelastoma (panels B,C). Papillary fibroelastomas are benign tumours that usually arise from valvular endocardium. They account for 8% of all cardiac tumours; however, as the incidence of primary cardiac tumours is low, at 0.002–0.33%, papillary fibroelastoma is correspondingly very rare. They can cause significant disease owing to their tendency to obstruct blood flow or embolise, and therefore should be surgically removed when found in the left side of the heart. This case is particularly interesting as it presented due to involvement of the conduction system, resulting in 2:1 heart block. To date, it seems to be the only papillary fibroelastoma of the left ventricular outflow tract to present with abnormalities of the conduction pathway.

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(A) Transthoracic echocardiogram showing a well-circumscribed pedunculated tumour (white arrow) along the outflow tract of the left ventricle. (B) Gross picture of the resected left ventricular outflow papillary fibroelastoma showing fine papillary fronds. (C) Histological examination of the left ventricular outflow tract papillary fibroelastoma, haematoxylin and eosin-stained papillary fronds lined by a single layer of endothelium, overlying hyalinised stromal cores.